



## NEWS IN BRIEF

### **DYING OF A BROKEN HEART?**

British researchers have studied how cardiac arrhythmia and brain function interact. Critchley and colleagues measured changes in cardiac response simultaneously with electroencephalography (EEG) in patients with established ventricular dysfunction.

They found that experimentally induced mental stress provoked sympathetic activity on the heart, with increased systolic blood pressure, heart rate, and ejection fraction. However, the functional response of the myocardium differed between patients – it increased for some, but other patients had reduced cardiac output during stress.

On the EEG, signal in the left temporal and lateral frontal regions correlated with stress-induced changes in cardiac output. Furthermore, heartbeat-evoked potentials in the left temporal region correlated with proarrhythmic status of the heart.

The authors suggest that the cerebral cortex participates in a feedback loop, where a proarrhythmic heart influences evoked potentials in the left temporal lobe. As the temporal lobe is involved with emotion, this can cause increased sympathetic outflow and further affect cardiac electrical activity. The

authors hypothesise that this may cause a vicious circle in situations of extreme emotion or stress – thereby explaining the phenomenon of “dying from a broken heart”.

*(Source: Daily Telegraph (UK); 10 April 2007 and PNAS (2007) 10.1073/pnas.0609509104 early online edition 9 April 2007)*

### **WHERE DOCTORS GO WRONG**

*How Doctors Think*, written by Harvard haematologist Jerome Groopman, took three years of research and is being touted as a must read for every physician who cares for patients and every patient who wishes to get the best care.

Groopman found that about 80% of medical mistakes are the result of predictable mental traps, or cognitive errors, that bedevil all human beings, with only 20% due to technical mishaps that typically loom larger in patients’ minds and on television shows.

Below are some of the more common thinking mistakes listed:

#### **1. Recognise the type.**

It is easy to be led astray by stereotypes that are based on someone’s appearance, emotional state, or circumstances.

Groopman describes this kind of “attribution error” in the case of a nervous young woman whose persistent loss of weight despite a high-calorie diet convinced doctors that she was anorexic or bulimic. However, after years of ill health, she was diagnosed with celiac disease – an allergy to wheat. Had the patient been male or older or less anxious, the doctors might have got it right in the first place.

**2. I just saw a case like this.**

“We all tend to be influenced by the last experience we had or something that made a deep impression on us,” says Groopman. So if it is January, your doctor has just seen 14 patients with the flu and you show up with muscle aches and a fever, he or she is more likely to say you have the flu – which is fine unless it is really meningitis or a reaction to a tetanus shot that you forgot to mention.

**3. I have got to do something.**

Physicians typically prefer to act even when in doubt about the nature of the problem. And yet this kind of “commission bias” can lead to all sorts of new problems if the treatment turns out to be incorrect.

“Don’t just do something. Stand there,” one of Groopman’s mentors told him years ago when he was uncertain of a diagnosis. This buys a doctor time to think – which is especially important when trying to ensure that something has not been overlooked.

**4. I hate (or love) this patient.**

Groopman cautions that emotions are more of an issue that most physicians like to admit. Doctors who are particularly fond of a patient have been known to miss the diagnosis of a life-threatening cancer because they just did not want it to be true. But negative emotions can be just as blinding, sometimes stopping a doctor from going the extra mile. “If you sense that your doctor is irritated with you, that he or she does not like you, then it is time to get a new doctor,” says Groopman. Studies show that most patients are pretty accurate in describing their doctors’ feelings toward them.

(Source: *Time Magazine*)

## WHAT’S NEXT

### Coming soon to a pharmacy near you

GlaxoSmithKline has filed for US FDA approval of **lapatinib** (Tykerb), a breast cancer drug that in combination with chemotherapy delayed the growth of tumours by more than eight months in patients who no longer responded to first-time Herceptin therapy. That is double the tumour-free time provided by treatment with chemotherapy alone. An added bonus: it is pill-based, making it far easier to take than Herceptin, which is administered intravenously.

On the AIDS front, Pfizer is waiting for the FDA to rule on the first of a new class of HIV drugs. **Maraviroc** attacks early in the infection process, hindering the virus’ ability to enter healthy cells and co-opt their new hosts’ machinery to churn out HIV.

And if you are one of the millions worldwide who toss and turn very night, Merck may provide some relief later this year. The company is ready to submit its latest data on **gaboxadol**, an insomnia treatment that could prove less addictive than some existing prescription sleep remedies. Gaboxadol works on a set of sleep receptors in the brain that could help patients sleep faster and stay slumbering longer.

### Plague 2.0

Bet on this for 2007: there will be no outbreak of a newly mutated, extremely infectious and lethally virulent H5N1 bird flu. Millions will *not* die from H5N1. This strain of flu has been tracked for almost a decade. If it has not managed to mutate into a form that makes it easy for human-to-human transmission by now, odds are something else is going to take the glory: another flu variant or something like the 2003 SARS outbreak.

Whatever it is, it will come out of nowhere.

(Source: *Time Magazine*)

### NITRIC OXIDE AND LUNG INJURY

A systematic review and meta-analysis in the *British Medical Journal* has studied the use of inhaled nitric oxide to treat acute lung injury. It analysed 12 randomised trials, involving over 1,200 adults and children with acute lung injury or acute respiratory distress syndrome. Nitric oxide was compared with placebo or usual care.

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Nitric oxide is a small signalling molecule. It relaxes smooth muscle in blood vessels. Agents acting on (or downstream of) the nitric oxide pathway include sildenafil, which has been used to treat erectile dysfunction. In the lung, nitric oxide has been shown to be a pulmonary vasodilator, and some clinicians have adopted its use based on previous data.

In the present review, although nitric oxide treatment temporarily improved oxygenation, the authors found no benefit in survival or duration of ventilation. They conclude: “Given that the best available evidence suggests no survival advantage and possible increased mortality and renal dysfunction with nitric oxide, we do not recommend its routine use.”

*(Source: BMJ (2007) doi:10.1136/bmj.39139.716794.55 early online publication 23 March 2007)*

## **PCI VERSUS OPTIMAL MEDICAL THERAPY**

In a study released early online by the *New England Journal of Medicine (NEJM)*, nearly 2,300 patients were randomised either to percutaneous coronary intervention (PCI) with optimal medical therapy (intensive drug

treatment with lifestyle intervention), or to optimal medical therapy only.

After a median follow-up of almost five years, 19% in the PCI group died or had MIs, compared to the 18.5% on medical therapy alone.

PCI patients showed some early symptom improvement: they were more likely to be free of angina at one and three years, but the difference was not significant after five years. Fewer PCI patients needed additional revascularization, though – at 5 years, the rate was 21% in the PCI group, versus 32% in the medical therapy group.

In a *NEJM* Editorial regarding this study, the commentator suggests: “Patients whose condition is clinically unstable, who have left main coronary artery disease, or in whom medical therapy has failed to control symptoms remain candidates for revascularization, but PCI should not play a major role as part of a secondary prevention strategy.”

The results of this study have implications for decisions surrounding PCI, and also emphasise the role of optimal medical therapy. ■

*(Source: NEJM (2007) 10.1056/NEJMoa070829 early online publication 26 March 2007; and NEJM (2007) 10.1056/NEJMe078036)*